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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|-----------------------|------------------|
| 10/814,528 | 03/31/2004 | Tom E. Pearson | ITL.1105US (P18745) | 6903 |
| 21906 | 7590 | 09/19/2006 | EXAMINER | |
| TROP PRUNER & HU, PC 1616 S. VOSS ROAD, SUITE 750 HOUSTON, TX 77057-2631 | | | GIRARDI, VANESSA MARY | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2833 | |

DATE MAILED: 09/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | | |
|------------------------------|------------------------|--|---------------------|--|
| Office Action Summary | Application No. | | Applicant(s) | |
| | 10/814,528 | | PEARSON ET AL. | |
| | Examiner | | Art Unit | |
| | Vanessa Girardi | | 2833 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1- 25 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

1. In view of the appeal brief filed on 13 July 2006, PROSECUTION IS HEREBY REOPENED. Grounds for rejection are set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,

(2) initiate a new appeal by filing a notice of appeal under 37 CFR 41.31 followed by an appeal brief under 37 CFR 41.37. The previously paid notice of appeal fee and appeal brief fee can be applied to the new appeal. If, however, the appeal fees set forth in 37 CFR 41.20 have been increased since they were previously paid, then appellant must pay the difference between the increased fees and the amount previously paid.

A Supervisory Patent Examiner (SPE) has approved of reopening prosecution by signing below:

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-5, 8-14, 17-21, 23 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Liao et al. (US 6,877,990 B2) in view of Ciabrone (US 5,626,280).

Liao et al. shows An integrated circuit socket 1 comprising: a socket housing 21; a hinged cover 25 secured to the housing; and a cap 3 removably secured to the cover (Col. 4, lines 13, 14).

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However Liao et al. does not show the cap **3** as infrared transmissive.

Ciambrone shows in analogous art, a cap **10** which is infrared transmissive (Col. 1, lines 8-9).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use the moldable infrared transparent material as taught by Ciambrone (Col. 1, lines 38-40) for the cap of Liao et al. wherein the cap may be recycled, reformed and reused, thus extending the useful life of the infrared transmissive cap.

With respect to claim 2; Liao et al. shows the cap **3** includes a plurality of openings **302** and **303** to allow the passage of heated air (Col. 4, lines 6, 7).

With respect to claim 3; Liao et al. shows spring catches **307** and **308** on opposed ends of the cap to removeably secure the cap to the cover.

With respect to claims 4 and 5; Liao et al. as modified by Ciambrone has been discussed above.

However Liao et al. does not show the cap **3** as transmissive to infrared radiation.

Ciambrone further teaches the cap **10** material is *transparent* to infrared radiation (Col. 1, lines 41, 42).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made the modification to the cap of Liao et al. with the material taught by Ciambrone for the reasons previously stated, would permit transmission of *at least* 80% and 95% of incident infrared radiation providing the advantages discussed above.

With respect to claim 8; Liao et al. shows the cap **3** includes standoffs **309** which space the cap from the cover.

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With respect to claim 9; Liao et al. shows the cap 3 has a curved lower surface 309.

With respect to claim 10; Liao et al. shows the cap 3 includes at least two apertures 305 and downwardly extending prongs 308 extending away from the apertures to reflect incident radiation passing through the apertures.

With respect to claim 11; Liao et al. shows a cap 3 for an integrated circuit socket comprising: a body 30 having apertures 302, 303, and tabs 307, 308 coupled to the body to removeably secure the body to an integrated circuit socket.

However Liao et al. does not show the body formed of a material that is infrared transmissive.

Ciambrone shows in analogous art, a cap 10 which is infrared transmissive (Col. 1, lines 8-9).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to use the moldable infrared transparent material as taught by Ciambrone (Col. 1, lines 38-40) for the cap of Liao et al. wherein the cap may be recycled, reformed and reused, thus extending the useful life of the infrared transmissive cap.

With respect to claim 12; Liao et al. shows tabs 307, 308 include spring catches on opposed ends of the cap to removeably secure the cap to the socket.

With respect to claims 13 and 14; Liao et al. as modified by Ciambrone has been discussed above.

However Liao et al. does not show the cap 3 as transmissive to infrared radiation.

Ciambrone further teaches the cap 10 material is *transparent* to infrared radiation (Col. 1, lines 41, 42).

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Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made the modification to the cap of Liao et al. with the material taught by Ciambrone for the reasons previously stated, would permit transmission of *at least* 80% and 95% of incident infrared radiation providing the advantages discussed above.

With respect to claim 17; Liao et al. shows the cap 3 includes standoffs 309 which space the cap from the cover.

With respect to claim 18; Liao et al. shows the cap 3 has a curved lower surface 309.

With respect to claim 19; Liao et al. shows the cap 3 includes at least two apertures 305 and downwardly extending prongs 308 extending away from the apertures to reflect incident radiation passing through the apertures.

With respect to claim 20; Liao et al. shows the cap 3 includes guides 309 and 305 to guide the cap into alignment with the socket.

With respect to claim 21; Liao et al. shows a method comprising: securing a cap to an integrated circuit socket (Col. 3, lines 58-67) and (Col. 4, lines 1, 2); and surface mounting the socket to a printed circuit board (Col. 4, lines 6, 7).

However Liao et al. does not show cap 3 as transmissive to infrared radiation nor does Liao et al. show the surface mounting method as specifically exposing the cap and the socket to infrared energy.

Ciambrone teaches the cap 10 material is transparent to infrared radiation (Col. 1, lines 41, 42) specifically for use in an infrared reflow soldering (Col. 3, lines 20-23).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time

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the invention was made to use the moldable infrared transparent material as taught by Ciambone (Col. 1, lines 38-40) for the cap of Liao et al. wherein the cap may be recycled, reformed and reused, thus extending the useful life of the infrared transmissive cap.

With respect to claim 23; Liao et al. shows the cap **3** includes a plurality of openings **302** and **303** to allow the passage of heated air (Col. 4, lines 6, 7).

With respect to claim 25; Liao et al. as modified by Ciambone has been discussed above.

However Liao et al. does not show the cap **3** as transmissive to infrared radiation.

Ciambone further teaches the cap **10** material is *transparent* to infrared radiation (Col. 1, lines 41, 42).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made the modification to the cap of Liao et al. with the material taught by Ciambone for the reasons previously stated, would permit transmission of *at least* 80% of the incident infrared radiation providing the advantages discussed above.

3. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Liao et al. (US 6,877,990 B2) and Ciambone (US 5,626,280) as applied to claim 21 above, and further in view of Edwin et al. (US 5,262,594). Liao et al. as modified by Ciambone has been discussed above.

Ciambone specifically states applicability and benefit is derived to any manufacturing process using infrared reflow soldering (Col. 2, lines 10-15).

However neither Liao et al. nor Ciambone disclose the origins of heat produced in a reflow oven.

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Edwin et al. teaches in analogous art the use of a reflow oven and specifically cites the oven produces both infrared and convective heating (Col. 6, lines 8-10).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made the welding in Liao et al. (Col. 4, line 6) and the infrared reflow soldering referred to in Ciambone (Col. 2, lines 10-15) are synonymous with the IR oven teachings of Edwin et al. which shows an IR oven produces both infrared and convective heating (Col. 6, lines 8-10).

4. Claims 6, 7, 15, 16 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Liao et al. (US 6,877,990 B2) and Ciambone (US 5,626,280) as applied to claims 1, 11 and 21 above, and further in view of Yu (US 6,626,691). Liao et al. as modified by Ciambone has been discussed above.

With respect to claims 6 and 15; neither Liao et al. nor Ciambone show or teach the cap is formed of plastic.

Yu teaches in analogous art the cap 40 is formed from plastic (Col. 2, line 64).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to use a plastic material as taught by Yu to further modify the infrared transmissive cap of Liao et al. / Ciambone to produce a relatively inexpensive cap that may be recycled, reformed and reused, thus extending the useful life of the infrared transmissive cap.

With respect to claims 7, 16 and 24; the cap of Liao et al. / Ciambone further modified by Yu does not explicitly teach a (*translucent*) red plastic.

It has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use, the problem(s) to be solved and the criteria of the objectives to be met. *In re Leshin*, 125 USPQ 416 (CCPA 1960).

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Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vanessa Girardi: Telephone number 571.272-5924.

Monday – Thursday 7 a.m. to 5:30 p.m. (EST)

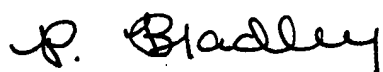
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paula Bradley can be reached on 571.272-2800 ext 33.

The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

VG

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September 6, 2006


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